UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/584,189	05/31/2000	Seung-Chan Bang	68268.000007	4177

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EXAMINER
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ART UNIT	PAPER NUMBER
2611	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

Office Action Summary	Application No.	Applicant(s)
	09/584,189	BANG ET AL.
	Examiner	Art Unit
	Kevin M. Burd	2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>05 June 2007</u>.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *See Continuation Sheet* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☒ Claim(s) *83,88-94,96,97,117,123,124,152,153,155,156,158,161-163* is/are allowed.

6) ☒ Claim(s) *180-247* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

1.   This office action, in response to the amendment filed 6/5/2007, is a final office

action.

Response to Arguments

2.   The previous 101 and 112, first paragraph rejections of the claims are withdrawn

in view of the amendment to the claims.

3.   Applicant's arguments filed 6/5/2007 have been fully considered but they are not

persuasive. Applicant states, in pages 34 and 35 of the remarks, the office action is

confusing data channels and control channels. The examiner disagrees. Ovesjo

discloses a further example of the selecting of spreading codes for data channels in

column 6, lines 5-42. The allocation of a PDCH code is conducted as well as the

allocation of a PCCH and an additional PDCH. This feature is also disclosed in claim 4

of Ovesjo. A PDCH is allocated code $C_{8,5}$, the additional PDCH could then be allocated

any of codes $C_{8,3}$, $C_{8,4}$, $C_{8,6}$, $C_{8,7}$, $C_{8,8}$ (column 6, lines 36-38). Applicant states the office

action is confusing the numbering system used by applicant with that used by Ovesjo.

The examiner disagrees. A majority of the claims do not claim the numbering system

disclosed in the remarks. In addition, Ovesjo discloses but an example of how the codes

can be allocated in column 5, lines 15-44 and column 6, lines 6-44. Ovesjo discloses

the selection of the codes is determined by the data rates and to preserve orthogonality.

Any selections of the codes that meet these two parameters are supported by the teachings of Ovesjo.

4.   Applicant states there is no suggestion to select the specific codes for the specific channels recited in the claims based on Ovesjo and Yoshida. The examiner disagrees for the reasons stated in the previous office action. Ovesjo discloses using different spreading codes on each channel. Yoshida discloses using the same spreading code for each I and Q pair of a binary digital signal as shown in figure 4A. Therefore, each I and Q pair of signals of the combination of Ovesjo and Yoshida would use the same spreading code and this spreading code will be different than the other I and Q pairs of the other input signals. The motivation for the combination of the teachings of Yoshida into the method of Ovesjo is provided in the previous office action.

5.   Applicant states the office action essentially engages in an "obvious to try" analysis. The examiner disagrees since Ovesjo discloses the allocation of the codes can be one of number of allocations. The reference has already determined which of the specific codes will meet the requirements in the situation. The selection will preserve orthogonality and is selected according to the data rate. As the data rate changes, so will the code selection.

        Applicant's remarks on pages 40-50 are the same as stated in the remarks filed 12/6/2006 on pages 36-47. These remarks were addressed in the previous office action as well as the response stated above.

        For these reasons and the reasons stated in the previous office action, the rejections of the claims are maintained and stated below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

6.   Claims 180, 181, 183-185, 187-190, 192-201, 203-205, 207-210, 212-219, 233,

234 and 237-244 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Ovesjo et al (US 6,108,369) in view of Yoshida et al (US 5,734,647).

Regarding claims 180, 181, 200 and 201, Ovesjo discloses a method for

spreading data using at least three data channels (abstract). The signals to be spread

have a plurality of pairs of in-phase and quadrature phase data. This is shown in figure

1A. The plurality of I signals are input to multipliers 10 and 12 where the quadrature

signals are input to multipliers 14 and 16. Data and control information is encoded to

data and control channels (column 3, lines 2-16). Code generating means generates

spreading codes to the channels. These spreading codes are selected on the basis of

data rates (column 5, lines 32-44). The spreading codes correspond to an orthogonal

variable spreading code (column 5, lines 16-31). The spreading codes allocated to the

data channels are represented in the code tree shown in figure 2. Though Ovesjo

discloses transmitting a plurality of pairs of I and Q signals as shown in figure 1A,

Ovesjo does not disclose allocating a spreading code to a first and second (I and Q)

data channel. Yoshida discloses a transmitter that spread an I and Q channel by the

same spreading code (column 8, lines 63 to column 9, lines 12 and figure 4A, elements

6, 8 and 34). It would have been obvious for one of ordinary skill in the art at the time of

the invention to use the same spreading code for each I and Q pair as taught by

Yoshida in the method of Ovesjo to minimize the number and complexity of spreading

codes used. This in turn would allow the data rate to be at a maximum. When three data

channels are used, the first, second and third data channels are used.

Regarding claims 183, 184, 203 and 204, Ovesjo discloses a plurality of I and Q

data channels in figure 1A.

Regarding claims 185, 189, 190, 205, 209 and 210, Ovesjo discloses spreading

more than three data channels in figure 1A.

Regarding claims 187-188, 192-197, 207, 208 and 212-217, Ovesjo discloses a

plurality of I and Q data channels in figure 1A.

Regarding claims 198, 199, 218 and 219, Ovesjo discloses generating the

spreading codes shown in figure 2.

Regarding claims 233, 237 and 240, Ovesjo discloses an apparatus for

spreading data using at least three data channels (abstract). The signals to be spread

have a plurality of pairs of in-phase and quadrature phase data. This is shown in figure

1A. The plurality of I signals are input to multipliers 10 and 12 where the quadrature

signals are input to multipliers 14 and 16. Data and control information is encoded to

data and control channels (column 3, lines 2-16). Code generating means generates

spreading codes to the channels. These spreading codes are selected on the basis of

data rates (column 5, lines 32-44). The spreading codes correspond to an orthogonal

variable spreading code (column 5, lines 16-31). The spreading codes allocated to the

data channels are represented in the code tree shown in figure 2. Though Ovesjo

discloses transmitting a plurality of pairs of I and Q signals as shown in figure 1A,

Ovesjo does not disclose allocating a spreading code to a first and second (I and Q)

data channel. Yoshida discloses a transmitter that spread an I and Q channel by the

same spreading code (column 8, lines 63 to column 9, lines 12 and figure 4A, elements

6, 8 and 34). It would have been obvious for one of ordinary skill in the art at the time of

the invention to use the same spreading code for each I and Q pair as taught by

Yoshida in the apparatus of Ovesjo to minimize the number and complexity of spreading

codes used. This in turn would allow the data rate to be at a maximum. When three data

channels are used, the first, second and third data channels are used.

Regarding claims 234, 238 and 241-243, Ovesjo discloses a plurality of I and Q

data channels in figure 1A.

Regarding claim 239, Ovesjo discloses spreading more than three data channels

in figure 1A.

Regarding claim 244, Ovesjo discloses generating the spreading codes shown in

figure 2.

7.   Claims 182, 186, 191, 202, 206, 211, 220-232, 235, 236 and 245-247, are

rejected under 35 U.S.C. 103(a) as being unpatentable over Ovesjo et al (US

6,108,369) in view of Yoshida et al (US 5,734,647) further in view of Stewart et al (US

6,009,091).

Regarding claims 182, 186, 191, 202, 206 and 211, the combination of Ovesjo

and Yoshida disclose the method stated above. The combination does not disclose the

spreading code allocated to the control channel is represented by a code with a

spreading factor of 256 and a code number of zero. Stewart discloses the DPCCH

consists of known pilot symbols to support channel and SNR estimations and is typically

spread by a factor of 256 (column 1, lines 41-47). It would have been obvious for one of

ordinary skill in the art at the time of the invention to utilize the control code of Stewart in

the combination of Ovesjo and Yoshida to take advantage of the power and rate control

used to control the data transmitted (column 1, lines 41-47).

Regarding claims 220, 221, 223, 224, 229 and 232, Ovesjo discloses an

apparatus for spreading data using numerous three data channels (abstract). The

signals to be spread have a plurality of pairs of in-phase and quadrature phase data.

This is shown in figure 1A. The plurality of I signals are input to multipliers 10 and 12

where the quadrature signals are input to multipliers 14 and 16. Data and control

information is encoded to data and control channels (column 3, lines 2-16). Code

generating means generates spreading codes to the channels. These spreading codes

are selected on the basis of data rates (column 5, lines 32-44). The spreading codes

correspond to an orthogonal variable spreading code (column 5, lines 16-31). The

spreading codes allocated to the data channels are represented in the code tree shown

in figure 2. Though Ovesjo discloses transmitting a plurality of pairs of I and Q signals

as shown in figure 1A, Ovesjo does not disclose allocating a spreading code to a first

and second (I and Q) data channel. Yoshida discloses a transmitter that spread an I and

Q channel by the same spreading code (column 8, lines 63 to column 9, lines 12 and

figure 4A, elements 6, 8 and 34). It would have been obvious for one of ordinary skill in

the art at the time of the invention to use the same spreading code for each I and Q pair

as taught by Yoshida in the method of Ovesjo to minimize the number and complexity of

spreading codes used. This in turn would allow the data rate to be at a maximum. When

three data channels are used, the first, second and third data channels are used. The

combination of Ovesjo and Yoshida disclose the method stated above. The combination

does not disclose the spreading code allocated to the control channel is represented by

a code with a spreading factor of 256 and a code number of zero. Stewart discloses the

DPCCH consists of known pilot symbols to support channel and SNR estimations and is

typically spread by a factor of 256 (column 1, lines 41-47). It would have been obvious

for one of ordinary skill in the art at the time of the invention to utilize the control code of

Stewart in the combination of Ovesjo and Yoshida to take advantage of the power and

rate control used to control the data transmitted (column 1, lines 41-47).

Regarding claims 225-227 and 230, Ovesjo discloses a plurality of I and Q data

channels in figure 1A.

Regarding claims 222, 228 and 231, Ovesjo discloses generating the spreading

codes shown in figure 2.

Regarding claims 235 and 245, the combination of Ovesjo and Yoshida disclose

the apparatus stated above. The combination does not disclose the spreading code

allocated to the control channel is represented by a code with a spreading factor of 256

and a code number of zero. Stewart discloses the DPCCH consists of known pilot

symbols to support channel and SNR estimations and is typically spread by a factor of

256 (column 1, lines 41-47). It would have been obvious for one of ordinary skill in the

art at the time of the invention to utilize the control code of Stewart in the combination of

Ovesjo and Yoshida to take advantage of the power and rate control used to control the

data transmitted (column 1, lines 41-47).

Regarding claims 236, 246 and 247, Ovesjo discloses spreading more than three

data channels in figure 1A.

Allowable Subject Matter

8.   Claims 83, 88-94, 96, 97, 117, 123, 124, 152, 153, 155, 156, 158 and 161-163

are allowed.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

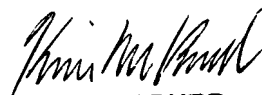extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Friday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin M. Burd   **KEVIN BURD**
7/30/2007   **PRIMARY EXAMINER**

Continuation of Disposition of Claims: Claims pending in the application are 83,88-94,97,117,123,124,152,153,155,156,158,161-163,180-247 and 966.